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L10: Entry 1 of 3

File: USPT

Jul 24, 2001

US-PAT-NO: 6264985

DOCUMENT-IDENTIFIER: US 6264985 B1

TITLE: Laminated tablet with pointed core

DATE-ISSUED: July 24, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Cremer; Karsten	Bonn			DE

US-CL-CURRENT: 424/473; 424/408, 424/468, 424/472, 424/474, 427/2.21, 71/64.07, 71/64.11

CLAIMS:

What is claimed is:

1. A method for producing a dry-coated tablet for the controlled release of an active substance, wherein

said tablet comprises a core and a shell, wherein said core is shaped to have at least one tapered end and said shell has at least one opening, said at least one opening in the shell is located so that the opening is on the tapered end of said core, whereby a part of the tapered end of the core is uncovered by the shell,

said core contains at least one active-substance containing material which is erodible in a liquid medium of application and said shell contains a material which is inherently stable in the liquid medium and which ensures that the release of the active substance takes place predominately through said opening,

the erosion of the core by the liquid medium entering into the interior portion of the shell on application through said opening results in an erosion front area of the core increasing with application time and the erosion front correspondingly increases in distance from said opening with application time, said method comprising

forming said core by compressing a powder or granules

containing said active substance to form a shape having at least one tapered end;

feeding said core into a die opening of a compression coating machine, which has been previously partially filled with a powder or granules of the shell material, in such a way that the tapered end of said core extends to the wall of the die; and

compressing said powder or granules of the shell material and said core together to yield a dry coated tablet which has a core and a shell, wherein said shell has an opening which does not cover the core.

2. A dry coated tablet for the controlled release of an active substance, comprising a compression molded core and shell, wherein said core is shaped to have at least one tapered end and said shell has at least one opening, said at least one opening in the shell is located so that the opening is on the tapered end of said core, whereby a part of the tapered end of the core is uncovered by the shell, wherein the core has a cross-section area which changes discontinuously as its distance from the opening in the shell increases,

said core contains at least one active-substance containing material which is erodible in a liquid medium of application and said shell contains a material which is inherently stable in the liquid medium and which ensures that the release of the active substance takes place predominately through said opening,

the erosion of the core by the liquid medium entering into the interior portion of the shell on application through said opening results in an erosion front area of the core increasing with application time and the erosion front correspondingly increases in distance from said opening with application time.

3. The tablet according to claim 2, wherein the shape of the dry-coated tablet corresponds to the shape of the core, and the core constitutes at least 70% of the weight of the tablet.

4. The tablet according to claim 2, wherein the core contains at least two different active substances and

these are added either in homogeneous mixture or in different layers of the core.

5. The tablet according to claim 2, wherein the same or different active substance is additionally added to the shell material.

6. The tablet according to claim 2, which has at least two cores with different active substances in a polyfunctional dry-coated tablet.

7. The dry coated tablet according to claim 2, wherein the active substance comprises a pharmaceutically active substance.

8. A method for the oral administration of a pharmaceutically active substance which comprises orally administering to a patient a dry-coated tablet according to claim 7.

9. The dry coated tablet according to claim 2, wherein the active substance comprises a plant protective agent.

10. The dry coated tablet according to claim 2, wherein the active substance comprises a fertilizer.

11. The dry coated tablet according to claim 2, wherein the active substance comprises an anti-microbial agent.

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NAME	CITY	STATE	ZIP CODE	COUNTRY
Cremer; Karsten	Bonn			DE

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
LTS Lohmann Therapie-Systeme GmbH	Neuwied			DE	03

APPL-NO: 08/ 810801 [PALM]

DATE FILED: March 6, 1997

PARENT-CASE:

This application is .sctn. 371 application of PCT/EP95/03474.

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
DE	44 31 653	September 6, 1994

PCT-DATA:

APPL-NO	DATE-FILED	PUB-NO	PUB-DATE	371-DATE	102(E)-DATE
PCT/EP95/03474	September 4, 1995	WO96/07401	Mar 14, 1996	Mar 6, 1997	Mar 6, 1997

INT-CL: [07] A61 K 9/24, A61 K 9/28, A61 J 3/10

US-CL-ISSUED: 424/473; 71/64.07, 71/64.11, 424/408, 424/472, 424/468, 424/474, 427/2.21

US-CL-CURRENT: 424/473; 424/408, 424/468, 424/472, 424/474, 427/2.21, 71/64.07, 71/64.11

FIELD-OF-SEARCH: 424/468, 424/464, 424/480, 424/408, 424/474, 424/473, 424/472, 128/260, 71/64.07, 71/64.11, 427/2.21, 427/272, 427/212

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

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	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/>	<u>3845770</u>	November 1974	Theewes et al.	128/260
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<input type="checkbox"/>	<u>3924622</u>	December 1975	Brooke	128/260
<input type="checkbox"/>	<u>3993072</u>	November 1976	Zaffaroni	128/260
<input type="checkbox"/>	<u>4692336</u>	September 1987	Eckenhoff et al.	424/468
<input type="checkbox"/>	<u>4803076</u>	February 1989	Ranade	424/438
<input type="checkbox"/>	<u>4814182</u>	March 1989	Graham	424/484
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<input type="checkbox"/>	<u>4816262</u>	March 1989	McMullen	424/467
<input type="checkbox"/>	<u>5004614</u>	April 1991	Staniforth	424/466
<input type="checkbox"/>	<u>5593694</u>	January 1997	Hayashida	424/468

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
4 025 484	October 1991	DE	
4 341 442	June 1995	DE	
259 219	March 1988	EP	
432 607	June 1991	EP	
542 364	May 1993	EP	

OTHER PUBLICATIONS

Higuchi, J. PLharm. Sci., vol. 50, pp. 874-875 (1961).
Theeuwes, Pharmacy International, vol. 5, pp. 293-296 (Dec. 1984).

ART-UNIT: 169

PRIMARY-EXAMINER: Dudash; Diana

ASSISTANT-EXAMINER: Haghighatian; Mina

ABSTRACT:

A dry-coated tablet for controlled release of active substance, having an erodible core tablet (1) containing at least one active substance, and a substantially erosion-resistant shell consisting of a dry-coated layer (5), is characterized in that the dry-coated layer (5) has at least one opening (6), and one end of the core tablet (1) extends as far as the opening (6).

11 Claims, 4 Drawing figures

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COMPRESSION.DWPI,TDBD,EPAB,JPAB,USPT.	540029
IMMEDIATE.DWPI,TDBD,EPAB,JPAB,USPT.	149626
RELEASE.DWPI,TDBD,EPAB,JPAB,USPT.	743440
CONTROLLED.DWPI,TDBD,EPAB,JPAB,USPT.	1875210
COAT?	0
COATA.DWPI,TDBD,EPAB,JPAB,USPT.	23
COATD.DWPI,TDBD,EPAB,JPAB,USPT.	122
COATE.DWPI,TDBD,EPAB,JPAB,USPT.	514
COATG.DWPI,TDBD,EPAB,JPAB,USPT.	28
COATH.DWPI,TDBD,EPAB,JPAB,USPT.	18
COATI.DWPI,TDBD,EPAB,JPAB,USPT.	279
(COMPRESSION COAT? AND (IMMEDIATE RELEASE OR CONTROLLED RELEASE)).USPT,JPAB,EPAB,DWPI,TDBD.	0

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INNER.DWPI,TDBD,EPAB,JPAB,USPT.	1798670
CORE.DWPI,TDBD,EPAB,JPAB,USPT.	687398
((COMPRESSION ADJ (COATING.CLM.)) AND (INNER ADJ CORE)).USPT,JPAB,EPAB,DWPI,TDBD.	3
(COMPRESSION COATING.CLM. AND INNER CORE).USPT,JPAB,EPAB,DWPI,TDBD.	3

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<u>L10</u>	compression coating.clm. and inner core	3	<u>L10</u>
<u>L9</u>	18 and 11 or 12	1053	<u>L9</u>
<u>L8</u>	immediate release and controlled release and compression coating	16	<u>L8</u>
<u>L7</u>	immediate release and controlled release and compression coating and inner core and outer layer	0	<u>L7</u>
<u>L6</u>	15 and pseudoephedrine.clm.	14	<u>L6</u>
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